

Appl. No. 10/711,313  
Amdt. dated May 8, 2006  
Reply to Office action of February 21, 2006

### REMARKS

#### **Objection to Claim 22**

5        Claim 22 has been objected to by the Examiner for the inappropriate use of the term  
"reference clock". The second occurrence of "reference clock" has been changed to  
"frequency", to properly refer to the clock signal being delayed and maintain consistency  
with analogous device claim 21. This correction has been carried out in the amendment  
for Claim 22 in accordance to Examiners suggestions.

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#### **Rejection of Claims 1, 11 under 35 U.S.C 102(e) as being anticipated by Harrison (US 6,842,399)**

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      Claim 1 has been amended to fully include the limitations of Claim 2. Claim 2 has  
been stated by the Examiner to be allowable if rewritten in independent form to include  
all limitations of its base and intervening claims. Applicant asserts that a merger of Claim  
2 into independent Claim 1 should therefore place Claim 1 into a state of allowance in  
20 accordance with Examiner remarks. Applicant kindly requests the Examiner to  
re-evaluate Claim 1 in consideration for its allowance.

      Similarly, the corresponding method claim (Claim 11) has also been fully amended  
to include the limitations of Claim 12. Claim 12 has additionally been stated by the  
25 Examiner to be allowable if rewritten in independent form including its base claim. As  
Claim 11 has been amended to include the limitations of Claim 12, applicant additionally  
asserts that amended Claim 11 should be found allowable as per Examiner remarks, and

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respectfully requests consideration for its allowance.

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**Rejection of Claims 2, 12 under 35 U.S.C 102(e) as being anticipated by Harrison  
(US 6,842,399)**

5 The limitations of Claim 2 have been fully amended into Claim 1, with Claim 2  
being subsequently cancelled. Similarly, The limitations of Claim 12 have been fully  
amended into Claim 11, with Claim 12 also cancelled.

10 **Rejection of Claims 3, 13, under 35 U.S.C 102(e) as being anticipated by Harrison  
(US 6,842,399)**

Claim 3 has been amended to be dependant upon currently amended Claim 1. Claim  
3 has been objected by the Examiner as being dependant on a rejected base claim.  
15 Applicant asserts that if Claim 1 is found allowable, than Claim 3 should additionally be  
found allowable as it is dependant base claim (Claim 1) should no longer be grounds for  
objection.

Similarly Claim 13 has been amended to be dependant upon Claim 11. Applicant  
20 asserts that if Claim 11 is found allowable by the Examiner, than Claim 13 should also be  
allowed as it is dependant on currently amended Claim 11.

25 **Rejection of Claims 4-5, 7, 14-15, 17 under 35 U.S.C 102(e) as being anticipated by  
Harrison (US 6,842,399)**

Claims 4, 5, and 7 are dependant upon currently amended Claim 1. Applicant asserts

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that if Claim 1 is found allowable, than Claims 4, 5, and 7 should additionally be found allowable as being dependant on Claim 1.

Similarly Claims 14-15, 17 are also dependant upon Claim 11. Applicant asserts that  
5 if Claim 11 is found allowable by the Examiner, than Claims 14-15, 17 should also be allowed as they are dependant on currently amended Claim 11.

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**Rejection of Claims 6, 16 under 35 U.S.C 102(e) as being anticipated by Harrison  
(US 6,842,399)**

Applicant asserts that Harrison does not teach a driving clock of the 180° phase  
5 detector to be the reference clock as per the limitation disclosed in Claim 6 of the present  
invention. According to Fig. 8 of Harrison, reference input 155 of "phase detector 154 is  
electrically coupled to receive a signal from the output of first divider 142" (Col 9 lines  
2-3). Inspection of Fig.8 will further reveal that the first divider 142 follows undivided  
clock input 141 in series. Therefore, since reference input 155 of phase detector 154 does  
10 not achieve a direct connection with the undivided clock input 141, applicant asserts that  
Harrison does not teach a driving clock of the phase detector to be a reference clock.

This is in contrast to the present invention. Inspection of Fig. 3 of the present  
invention will reveal that the driving clock signal of 180° phase detector 26 is attained  
15 with the reference clock (CLKr) through Multiplexer 28. Fig. 6 shows an alternate  
embodiment devoid of the multiplexer 28, where the reference clock is directly inputted  
into the driving clock input of the 180° phase detector 26. This configuration allows  
triggering of the 180° phase detector 26 to occur at normal intervals of a reference clock  
for higher resolution sampling, or normal operation without frequency division following  
20 prior art methods.

**Rejection of Claim 22 under 35 U.S.C 102(e) as being anticipated by Harrison (US  
6,842,399)**

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Applicant asserts that Claim 22 is a method claim analogous to device Claim 21,  
which is currently allowed by the Examiner. Claim 22 has been amended to more

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properly reflect characteristics of the present invention as described in Claim 21 in a method format. In particular, applicant asserts that Harrison does not teach a method for programming the division of the clock signal, as disclosed in the limitation for currently amended Claim 22. Applicant respectfully requests that the Examiner re-evaluate claim  
5 22 in light of current amendments in consideration for its allowance.

#### New Claims 23, 24

10 Independent Claim 23 has been added as a device claim describing an additional embodiment of the present invention. In addition to aforementioned components and device operation, Claim 23 is highlighted by the 180° phase detector for further utilizing the reference clock as a driving clock for operation of the detector. This embodiment is illustrated in Fig 6 of the present invention disclosure, where the reference clock CLK<sub>R</sub> is  
15 directly coupled to 180° phase detector 26 as a driving clock for device operation. Additionally, the preferred embodiment in Fig 3 can also utilize the reference clock CLK<sub>R</sub> as the driving clock for the 180° phase detector 26 through appropriate selection of the MUX 28. Claim 24 is also a new method claim analogous to Claim 23.

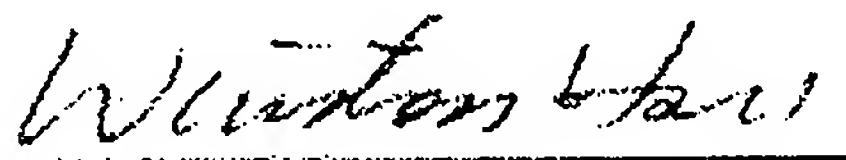
20 No new or additional matter was used in the above claims. All Claims are fully supported in the original disclosure. For example, paragraph [23] states that "only the reference clock CLK<sub>R</sub> can be used as the trigger for the 180° phase detector 26".

With regards to patentability, applicant asserts that Claims 23 and 24 should be  
25 found patentable over the Examiners cited reference, as Harrison teaches "The reference input 155 of phase detector 154 is electrically coupled to receive a signal from the output of the first divider 142" (Col 9 lines 1-3). Fig 8 of Harrison further illustrates this point

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showing the reference input 155 of phase detector 154 being coupled to the clock divider  
142. Because the reference input 155 of Harrison's phase detector is solely coupled to the  
divided clock 142, applicant asserts that operation of the phase detector only corresponds  
to the divided clock as the driving clock. Applicant kindly requests the Examiner to  
5 evaluate new Claims 23 and 24 in consideration for their allowance.

Sincerely yours,



Date: 05.08.2006

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is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)